

SOME ACARINA FROM AUSTRALIA AND NEW GUINEA
PARAPHAGIC UPON MILLIPEDES AND COCKROACHES AND ON
BEETLES OF THE FAMILY PASSALIDAE

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SUMMARY

A new species of the genus *Heterocheylus* Lombardini, 1926, *H. lombardini* sp. nov., is described from under the elytra of a Passalid beetle from Mt. Lamington, Queensland. This is the first record of the genus from Australia. The only other two described species are *H. fusiformis* Lomh., 1926, from Brazil and *H. lomani* Trägårdh, 1950, from Africa. A key to the three species is given.

Pt. 3.—The family Heterocheylidae
(Acarina-Trombidiformes)

Family PSEUDOCHEYLIDAE Oudemans, 1909.

Oudemans, A. G., 1909, Tijds. v. Entom., 52 (1-2): pp. 19-61.

Subfamily HETEROCHEYLINAE Trägårdh, 1950.

Trägårdh, I., 1950, Entom. Tidsk., 71 (2), p. 109.

Genus HETEROCHEYLUS Lombardini, 1926.

Lombardini, G., 1926, Boll. Soc. Entom. Ital., 57 (1), pp. 160-1.

Type *Heterocheylus fusiformis* Lom., 1926.

In 1926 Lombardini erected this genus for *H. fusiformis* n. sp. found on a Passalid beetle from Brazil. In this paper he described and figured only the female, but later (Mem. Soc. Entom. Ital., 17 (1), p. 120, 1938) he briefly described and figured what he regarded as the nymphal male, also from a Brazilian Passalid.

In 1950 Trägårdh described and figured a second species *H. lomani* n. sp. from a single specimen from a Passalid from the Belgian Congo. Trägårdh placed *fusiformis* in the subfamily Heterocheyletinae, a mis-spelling for Heterocheylinae, now raised to family rank as the Heterocheylidae. In my present studies of the Acarina paraphagic on Passalid beetles, millipedes, etc., from Australia and New Guinea, a third species, *H. lombardini* sp. nov., has been found on a Passalid (*Mastochilus* sp.) from Mt. Lamington, Queensland, December, 1948 (coll. H.W.). It is represented by three females and three nymphs (? males), now in the South Australian Museum collections.

***Heterocheylus lombardini* sp. nov.**

Text Fig. 1, A-J

Holotype female.—Fig. A-H. Shape as figured and as in other species. Length overall 638 μ , of idiosoma 522 μ ; width of idiosoma 278 μ .

Dorsal.—*Gnathosoma* somewhat triangular, but slightly swollen apically just behind the mandibles, with a pair of minute setae immediately behind the chelicerae. *Propodosoma* anteriorly with two pairs of widely separated minute

* South Australian Museum.

setae, the posterior pair slightly nearer together than the anterior pair, posteriorly and near to the posterior margin with a pair of closely adjacent conspicuous clavate papilliform setae. *Hysterosoma* with four segments, the anterior (I) somewhat hexagonal in shape, as long as wide, with a long 150μ lateral seta at

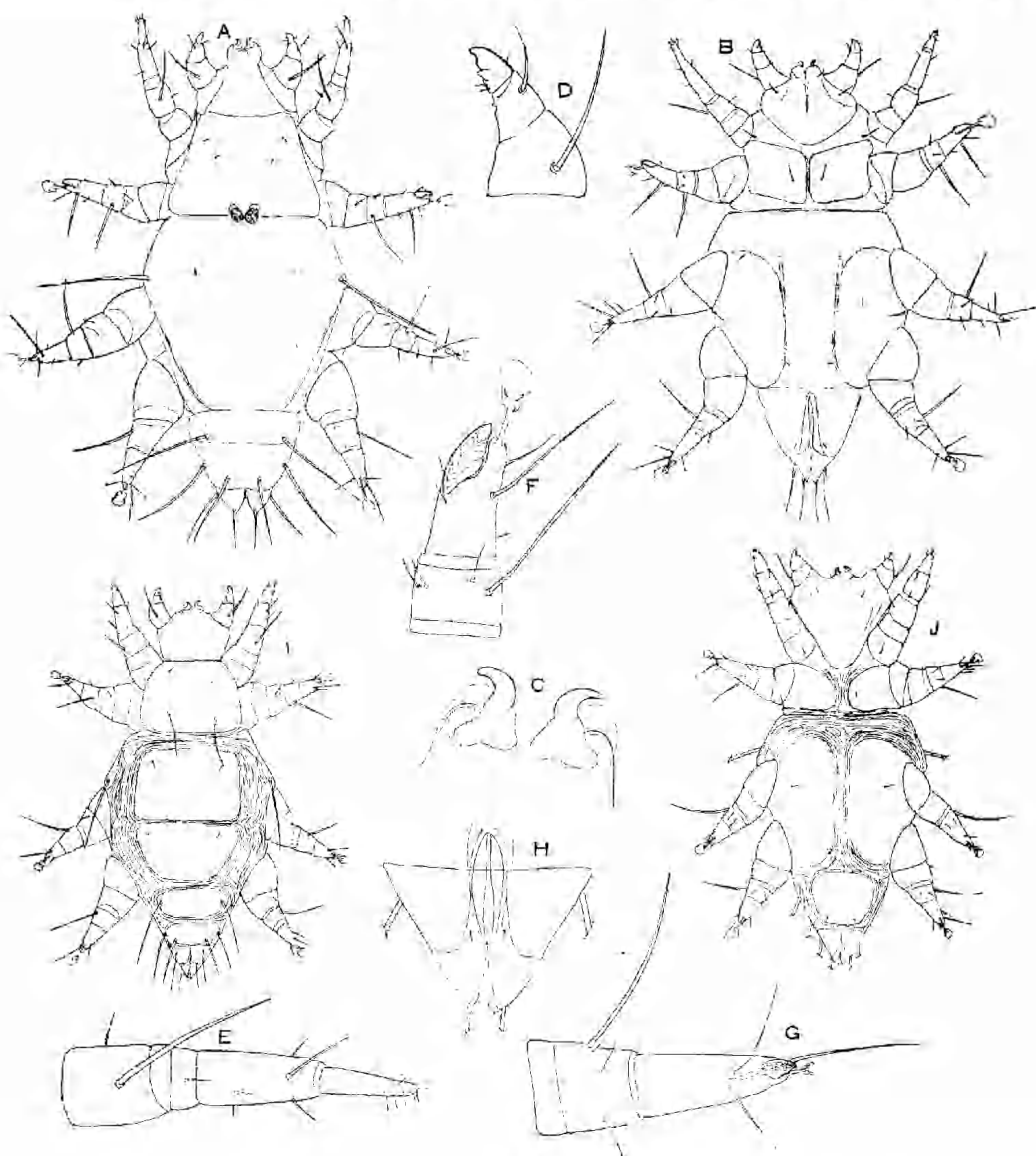


Fig. 1

Heterocheylus lombardini sp. nov. A-H. Female: A, dorsal view; B, ventral view; C, chelicerae; D, palp; E, leg I; F, tibia and tarsus leg II; G, tibia and tarsus leg IV; H, genitalia. I-J. Nymph: I, dorsal view; J, ventral view.

the lateral angles; slightly in front of these and 132μ apart is a pair of minute setae and midway between these and the posterior end of the segment is another pair equally distant apart; segment II is rather collar-like, slightly more than three times as wide as long, with a long setae 127μ in each posterior angle

and with a minute seta in front of each of these; segment III is about twice as long as II, with tapering sides and with two pairs of long setae, a mid-lateral one on each side 130μ long and a submedian subposterior pair 108μ long; segment IV is more triangular, bilobed with a longitudinal incision, a pair of lateral setae 127μ long and a pair of apical setae 66μ long situated one on the tip of each lobe.

The *mandibles* are small with the chelicerae outwardly curved and edentate. *Palpi* as figured, curved inwards and forceps like; femoral segment large, as broad as long with a long 62μ dorsal seta reaching to tip of palp; next segment as long as broad at its base with a finer dorsal seta 33μ long; the apical segment is a strong edentate claw with an inner basal accessory tooth and a pair of minute setae.

Ventral.—*Gnathosoma* with a pair of minute setae just behind the chelicerae and a longer one on each side at the base of the palpi. *Propodosoma* without epimera to leg I, but with a seta just behind the basal segment of the leg; epimera of leg II roughly rectangular, its inner margins confluent with each other in the medial line for about three-fourths of the length, the posterior margins are outwardly oblique a little in front of the propodosomal suture and not confluent therewith, there is a short seta on each side placed medially and near to the inner margins and not on shieldlets. *Hysterosoma* with the epimera of legs III and IV coalesced to form long shields separated medially by a strip of cuticle only slightly narrower than the shields, each shield is furnished with one seta near the anterior margin and one in the middle of epimera III, near the posterior end of the intervening ventral strip is another pair of small setae; posterior of legs IV, segments II, III and IV are confluent to form a single unit, which is tapering, and which bears the elongate genital orifice.

Legs.—All 7-segmented, short, fairly stout and tapering, I-IV of equal length 197μ ; I is antennaeform, somewhat more slender than the others, and the tarsus without caruncle or claws; II-IV are much stouter, the tarsi ending in a strong small claw-like spine which is much larger on II than on III and IV, each tarsus also with a distinct caruncle, pad and a pair of fine minute claws.

Nymph.—Fig. I-J. As figured. Length entire 580μ , of idiosoma 464μ , width idiosoma 278μ .

Dorsal.—*Gnathosoma* as in adult. *Propodosoma* with shield completely covering dorsally, with two pairs of widely separated minute setae anteriorly as in adult, without the median posterior clavate setae of the adult but with a pair of long simple setae 108μ long, 89μ apart and 36μ from the posterior margin. *Hysterosoma* with four dorsal shields indicating the four segments as in the adult, but these shields except the fourth do not nearly cover the dorsal surface of the segment being surrounded laterally by longitudinal striations and separated from each other by transverse striations, the large shield of segment I, however, is divided medially into two parts, of which the anterior is rectangular, wider than long, and slightly longer than the posterior part, it is furnished with one pair of minute setae situated in the antero-lateral angles; the posterior part of this shield tapers posteriorly to a margin of about half the width of the anterior margin, it is wider than long and also furnished with a pair of minute setae in the antero-lateral angles, the pair of long lateral setae, 118μ long, are situated on small shields on the extreme margins of the body away from the shield itself; the shield on segment II is rather transversely oval, not extending right across the segment and furnished with one pair of sub-lateral long 104μ setae; the shield of segment III is similar but narrower, with one pair of lateral setae 75μ long and a pair of subposterior setae 75μ long;

the shield of segment IV covers the whole segment, is bilobed with a longitudinal fissure as in the adult and with two pairs of long setae 56μ and 33μ .

Legs.—As in the adult, all 174μ long; the claw-like spine on tarsi is small and of equal size on legs II-IV.

Ventral.—No epimera to leg I. Epimera of leg II roughly rectangular, not touching in the medial line and the posterior margin not confluent with the propodosomal suture, with one small seta in the medial angles. Epimera of legs III and IV confluent as in the adult forming two wide longitudinal shields separated by a narrower strip of the venter with distinct longitudinal striations, each shield has one small seta in the epimeral area of leg III, and there is another pair at the posterior end of the intervening striated strip. There is only a single roughly quadrate shield on segments II and III together which is furnished with one pair of small subposterior setae, this shield is encircled by striations. Segment IV is as figured, bilobed as in the adult.

Remarks.—This species is readily separated in the adult from the type species *H. fusiformis* Lomb. from Brazil in the pair of propodosomal clavate setae being set close together. In his species *H. lomani*, Trägårdh was unable to see these setae, but this species differs from both *fusiformis* and *lombardini* in that the posterior margins of the epimera of legs II are confluent with the propodosomal suture.

Lombardini in his description of the nymph regards his specimen as a "nympham maris". This is somewhat hypothetical. In his figure he does not delineate any shields dorsally on the segments of the hysterosoma, but as he probably failed to notice their outlines by the striations it cannot be assumed that they were not present in his species. He does not figure the ventral surface.

Modifying Trägårdh's key to the species (*fusiformis* and *lomani*) the three species now known may be separated in the adult stage as follows:

Key to the species of *Heterocheylus*.

1. Posterior margin of epimera II oblique and not confluent with propodosomal suture. 2

Posterior margin of epimera II straight and contiguous with propodosomal suture. Ventral strip between epimera III and IV of equal width throughout—Belgian Congo.

H. lomani Träg., 1950.

2. Clavate setae on propodosoma closely adjacent. Ventral strip between epimera III and IV slightly narrower than width of epimera and almost equally wide throughout—Australia.

H. lombardini sp. nov.

Clavate setae on propodosoma widely separated by about four diameters. Ventral strip wider than epimera III and IV and much wider anteriorly than posteriorly—Brazil.

H. fusiformis Lomb., 1926.

It is a pleasure to name the above new species after the creator of the genus, Prof. G. Lombardini of Florence, Italy.

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 LOMBARDINI, G., 1938. "Acari novi", Mem. Soc. Ent. ital., 17 (1), p. 44.
 TRÄGÅRDH, I., 1950. Description of a new species of *Heterocheylus* Lombardini from Africa with notes on the classification of the Pseudocheyletidae.—Entom. Tijds., 71 (2), pp. 104-110.